AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for minimizing contact between a needle point and needle thread in a computer controlled embroidery machine, to prevent breakage of said thread by said needle point upon penetration of a workpiece during stitching, said method comprising the steps of:

> determining a first straight line path between a current needle penetration location and a next needle penetration location; ~~and,~~
>
> determining a probability of needle thread breakage for said first straight line path;
>
> selecting a second non-straight path if said probability is within a predetermined range; and,
>
> moving to said next needle penetration location along said ~~a~~ second non-straight path so that said needle thread is pulled away from said needle point .

2. (Cancelled)

3. (Original) The method of claim 1 wherein said second non-straight path has a variable shape.

4. (Original) The method of claim 3 wherein said shape includes sinusoids, curves, arcs, and straight lines.

5. (Currently Amended) The method of claim 4 wherein said shape is modified in response to variables including at least one of thread tension, thread strength, thread diameter, stitch length, workpiece thickness, workpiece material, sewing speed, acceleration, speed of movement, and distance between said needle point and said workpiece.

6. (New) A method for minimizing contact between a needle point and needle thread in a computer controlled embroidery machine, to prevent breakage of said thread by said needle point upon penetration of a workpiece during stitching, said method comprising the steps of:

determining a first straight line path between a current needle penetration location and a next needle penetration location; and,

moving to said next needle penetration location along a second non-straight path so that said needle thread is pulled away from said needle point;

wherein said second non-straight path has a variable shape;

wherein said shape includes sinusoids, curves, arcs, and straight lines; and,

wherein said shape is modified in response to variables including at least one of thread tension, thread strength, thread diameter, stitch length, workpiece thickness, workpiece material, sewing speed, acceleration, speed of movement, and distance between said needle point and said workpiece.

7. (New) The method of claim 6 and further comprising the steps of:

determining a probability of needle thread breakage for said first straight line path; and,

selecting said second non-straight path if said probability is within a predetermined range.

8. (New) A system for minimizing contact between a needle point and needle thread in a computer controlled embroidery machine, to prevent breakage of said thread by said needle point upon penetration of a workpiece during stitching, said system comprising:

a processor coupled to said embroidery machine and adapted for: determining a first straight line path between a current needle penetration location and a next needle penetration location; determining a probability of needle thread breakage for said first straight line path; selecting a second non-straight path if said probability is within a predetermined range; and, controlling said embroidery machine to move said needle point to said next needle penetration location along said second non-straight path so that said needle thread is pulled away from said needle point.

9. (New) The system of claim 8 wherein said second non-straight path has a variable shape.

10. (New) The system of claim 9 wherein said shape includes sinusoids, curves, arcs, and straight lines.

11. (New) The system of claim 10 wherein said shape is modified in response to variables including at least one of thread tension, thread strength, thread diameter, stitch length, workpiece thickness, workpiece material, sewing speed, acceleration, speed of movement, and distance between said needle point and said workpiece.

12. (New) A system for minimizing contact between a needle point and needle thread in a computer controlled embroidery machine, to prevent breakage of said thread by said needle point upon penetration of a workpiece during stitching, said system comprising:

> a processor coupled to said embroidery machine and adapted for: determining a first straight line path between a current needle penetration location and a next needle penetration location; and, controlling said embroidery machine to move said needle point to said next needle penetration location along a second non-straight path so that said needle thread is pulled away from said needle point; wherein said second non-straight path has a variable shape; wherein said shape includes sinusoids, curves, arcs, and straight lines; and, wherein said shape is modified in response to variables including at least one of thread tension, thread strength, thread diameter, stitch length, workpiece thickness, workpiece material, sewing speed, acceleration, speed of movement, and distance between said needle point and said workpiece.

13. (New) The system of claim 12 wherein said processor is further adapted for: determining a probability of needle thread breakage for said first straight line path; and, selecting said second non-straight path if said probability is within a predetermined range.

14. (New) A computer program product having a computer readable medium tangibly embodying computer executable code for directing a computer controlled embroidery machine to minimize contact between a needle point and needle thread to prevent breakage of said thread by said needle point upon penetration of a workpiece during stitching, said computer program product comprising:

code for determining a first straight line path between a current needle penetration location and a next needle penetration location;

code for determining a probability of needle thread breakage for said first straight line path;

code for selecting a second non-straight path if said probability is within a predetermined range; and,

code for moving to said next needle penetration location along said second non-straight path so that said needle thread is pulled away from said needle point.

15. (New) The computer program product of claim 14 wherein said second non-straight path has a variable shape.

16. (New) The computer program product of claim 15 wherein said shape includes sinusoids, curves, arcs, and straight lines.

17. (New) The computer program product of claim 16 wherein said shape is modified in response to variables including at least one of thread tension, thread strength, thread diameter, stitch length, workpiece thickness, workpiece material, sewing speed, acceleration, speed of movement, and distance between said needle point and said workpiece.

18. (New) A computer program product having a computer readable medium tangibly embodying computer executable code for directing a computer controlled embroidery machine to minimize contact between a needle point and needle thread to prevent breakage of said thread by said needle point upon penetration of a workpiece during stitching, said computer program product comprising:

code for determining a first straight line path between a current needle penetration location and a next needle penetration location; and,

code for moving to said next needle penetration location along a second non-straight path so that said needle thread is pulled away from said needle point;

wherein said second non-straight path has a variable shape;

wherein said shape includes sinusoids, curves, arcs, and straight lines; and, wherein said shape is modified in response to variables including at least one of thread tension, thread strength, thread diameter, stitch length, workpiece thickness, workpiece material, sewing speed, acceleration, speed of movement, and distance between said needle point and said workpiece.

19. (New) The computer program product of claim 18 and further comprising:

code for determining a probability of needle thread breakage for said first straight line path; and,

code for selecting said second non-straight path if said probability is within a predetermined range.